

What is claimed is:

1. A data conversion method for displaying an image,  
comprising conversion of original frame data indicating  
5 gradation of a pixel into display frame data defining a  
light emission timing of a display element in a display  
frame period, the conversion including the steps of;

determining a light emission waveform in accordance  
with display frame data of plural frames containing the  
10 current frame and the previous frame;

performing Fourier expansion of an error between the  
determined light emission waveform and a target light  
emission waveform defined by the original frame data  
corresponding to the determined light emission waveform;  
15 and

setting the display frame data of the current frame so  
that a sum of error components with weights that are  
obtained by weighting each Fourier component.

2. The data conversion method according to claim 1,  
20 wherein the weight of each Fourier component is set  
individually for each light emission color of a display  
element.

3. The data conversion method according to claim 1,  
wherein the weight of Fourier component of a frequency  
25 above a flicker frequency is set to "0".

4. The data conversion method according to claim 1,  
wherein the display frame period is different from the  
original frame period.

5. The data conversion method according to claim 4,  
30 wherein the Fourier expansion is performed for each time

range having a unit of the display frame period.

6. The data conversion method according to claim 4, wherein the Fourier expansion is performed for each time range having a unit of the original frame period.

5 7. The data conversion method according to claim 1, wherein the target light emission waveform is an interpolation waveform obtained by linear approximation of a transition of discrete target light emission values in each original frame.

10 8. A data conversion method for displaying an image, comprising conversion of original frame data indicating gradation of a pixel into display frame data defining a light emission timing of a display element in a display frame period, the conversion including the steps of;

15 performing Fourier expansion of an error between a gradation waveform indicating a transition of gradation to be displayed and a target gradation waveform, an error with weight obtained by setting weight to each Fourier component being small;

20 performing Fourier expansion of an error between a gradation waveform indicating a gradation transition defined by display frame data of plural frames containing the current frame and the previous frame and a target gradation waveform defined by original frame data  
25 corresponding to the gradation waveform; and

setting the display frame data of the current frame so that a sum of error components with weight that are obtained by weighting each Fourier component

9. The data conversion method according to claim 8,  
30 wherein the weight of each Fourier component is set

individually for each light emission color of a display element.

10. The data conversion method according to claim 8, wherein the weight of Fourier component of a frequency  
5 above a flicker frequency is set to "0".

11. The data conversion method according to claim 8, wherein the display frame period is different from the original frame period.

12. The data conversion method according to claim 11,  
10 wherein the Fourier expansion is performed for each time range having a unit of the display frame period.

13. The data conversion method according to claim 11, wherein the Fourier expansion is performed for each time range having a unit of the original frame period.

14. The data conversion method according to claim 8,  
15 wherein the target gradation waveform is an interpolation waveform obtained by linear approximation of a transition of discrete target gradation values in each original frame.

15. A display device expressing gradation of original  
20 frame data by controlling a light emission timing of a display element in accordance with display frame data, the device comprising:

an original frame memory for memorizing original frame data of at least one frame;

25 a display frame memory for memorizing display frame data of at least one frame;

a data converting circuit for outputting data  
corresponding to an input data value as display frame data  
of the n-th frame, responding to an input of original frame  
30 data of the n-th frame, original frame data of at least (n-

1)th frame from the original frame memory and display frame data of at least (n-1)th frame from the display frame memory, wherein the display frame data outputted by the data converting circuit are prepared by the data conversion method of claim 1.

16. A display device expressing gradation of original frame data by controlling a light emission timing of a display element in accordance with display frame data, the device comprising:

an original frame memory for memorizing original frame data of at least one frame;

a display frame memory for memorizing display frame data of at least one frame;

a data converting circuit for outputting data corresponding to an input data value as display frame data of the n-th frame, responding to an input of original frame data of the n-th frame, original frame data of at least (n-1)th frame from the original frame memory and display frame data of at least (n-1)th frame from the display frame memory, wherein the display frame data outputted by the data converting circuit are prepared by the data conversion method of claim 8.